

No.	√	DESIGN REVIEW CHECKLIST FOR BARRACKS EACH COMMENT MUST BE CHECKED FOR COMPLIANCE	BDM REFERENCE
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		<u>GENERAL</u>	
1.		<p>All drawing sheets in the set are uniform in size, and are no larger than the standard US size. Sheets comply with the following parameters:</p> <p>Sheet size max. 30 x 40 inches (761 x 1016 mm)</p> <p>Drawing area max. 28 x 37 inches (712 x 940 mm)</p> <p>Cut line top, bottom, and right sides - ½ inch (12 mm) from the sheet edge</p> <p> left side – 1-½ inch (37 mm) from the sheet edge (for mounting)</p> <p><i>If a larger sheet size has been used, written permission was received from the USAREUR ODCSENGR office prior to the start of the design.</i></p>	EUDM 1110-3-1 Figs. 3-12
2.		Drawings are rolled and bound. Do not fold drawings and place in binders. Specs are placed in binders.	
3.		Project number is shown on cover sheet and in all drawing sheet title blocks.	
4.		The English translation of the design analysis and specifications is provided.	
5.		All drawing text is legible. The lettering is at least 2 mm in height and is not compressed. A minimum space of 2 mm is provided between text and linework. Text does not conflict with dimensions, furnishings, etc.	
6.		The North arrow has been provided on all site/building plans and enlargement drawings.	
7.		Room numbers are assigned and entered on the drawings per the BDM.	B 03.1.4
8.		Room names are shown in each room on the floor plans.	
9.		Details for the laundry, arms room, corridor, latrines, dormer windows, fire extinguisher cabinets, window screens, storage bins, hand rails, roof and gutters are provided.	
10.		Match lines are provided wherever plans are split among two or more sheets. Match lines are coordinated among the drawings.	
11.		Each window type (i.e. W1, W2, W3, etc.) is numbered on all drawings. The numbers are cross-referenced with the specifications and details.	

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12.	Window schedules include the material, handle location, operation (such as turn/tilt), and type (i.e. W1, W2, W3, etc.) of each window.	
13.	By each door opening on the plans, enter the door type (i.e. D1, D2, D3, etc.), and room number. The room numbers are shown exactly as it appears on the sign above the door. The door types are cross-referenced and consistent with the specifications and details.	
14.	The rating designation for each fire rated door is shown on all drawings.	
15.	The door schedules include the size, material, type (i.e. D1, D2, D3, etc.), fire rating, and hardware set number of each door.	
16.	Wall-mounted SAFLOK readers have been provided as required, with the locations clearly indicated by a SAFLOK symbol. If the SAFLOK reader is wall-mounted, the location of the lock is clearly indicated.	
17.	Appropriate power supply for SAFLOK readers is shown in the electrical drawings.	
18.	Weather protection for SAFLOK readers at exterior doors is shown on elevations.	
19.	SAFLOK readers are not used at double leaf doors.	
20.	Door stops are indicated in the hardware schedule and are in accordance with the BDM. Door stops are wall mounted.	B 07.4.2
21.	Door jambs, heads, and sills are detailed (minimum scale 1:5).	
22.	On all architectural floor plans and enlargements, each room/area is labeled, or is keyed to a label legend. In CADD drawings, the room designations are assigned to a separate level to avoid interference with installations on the mechanical and electrical drawings.	
23.	Basement windows do not have bars. Existing window bars have been removed.	
24.	The window operating handles are located and dimensioned at 1.50 m above FFL on elevations.	Figs. 07.38- 07.43
25.	All double windows have one turn-tilt leaf and one tilt leaf. Large-scale details are provided.	B 07.4.13 Figs. 07.38- 07.41

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26.	Transom windows are turn-tilt. The operating handle is attached to the right side of the window for single transoms, and in the center for double transoms.	Figs. 07.40 & 07.41
27.	The water pipe material was chosen by the DPW from the piping materials allowed in the BDM.	
28.	Details of the picture rails are provided (minimum scale 1:5).	B 07.1.1.2 Fig. 07.2
29.	Details of the baseboards and wood wall caps are provided (minimum scale 1:5).	B 07.1.1.5 Fig. 07.1
30.	The electrical drawings show the designated lighting in Foot Candles (FC) for each area.	
31.	The mechanical drawings show the designed heating temperatures in Celcius for each area.	
32.	All through wall ventilation openings are shown on the floor plans.	
33.	Furniture, cabinet handles, water faucets and electrical outlets are shown on all enlarged plans and elevations.	
34.	A run-through is provided from the sink for all floor drains in janitor's closets, bathrooms and latrines to keep the odor trap from drying out.	
35.	Electrical receptacles are flush mounted.	
36.	All door and window hardware are in accordance with the BDM.	
37.	All heating lines are flush mounted and/or in shafts.	
38.	Radiator valves are installed horizontal to radiators.	
39.	All cast stone floors are installed in accordance with DIN 18022, Table 3, line 4 with reference to evenness. Contrary to VOB/C DIN 18333 finishes are installed with increased accuracy. Height difference (according to DIN 18333, para 3.1.2) between adjacent slabs is not acceptable.	
40.	All cast stone floors are specified to be ground with wet grinding machines. Upon completion of grinding floors shall be cleaned with scouring vacuum machines also called automatic scrubbing and cleaning machines. Final cleaning according to VOB/C DIN 18 333 ATV cast stone works shall be done by the contractor before	

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	acceptance by the Government.	
41.	Window screens are provided for all windows except mechanical, electrical, corridor and stairwell windows.	
42.	NORA floor covering comes from the factory with a protective film which protects the flooring surface from stains and markings during construction. The protective film must be removed with an appropriate deep penetrating cleaning which has a PH rating of less than 12. Prior to turn over of the building all floors shall be waxed and polished according to the manufacturer's instructions.	
43.	Toilet bowl rim height is 45 cm above the finished floor.	
44.	Wall base in corridors and stairwells is granite and is installed flush with the walls tiles.	
45.	Bedroom curtains are per BDM.	B 07.4.13.1.2
46.	Exterior steps are non slip natural stone.	
47.	Colors have been selected by the DPW from the "warm" or "cold" series in the BDM.	
48.	A building signage specification is provided.	
49.	New roof mounted items are painted or factory finished to match roof color.	
	<u>SITE WORK</u>	
50.	Appropriate traffic signs have been provided.	
51.	Landscaping will not interfere with conveyors at the corridor windows	
52.	Existing and new fire hydrants are shown on the site plans.	
	<u>CORRIDORS</u>	
53.	Picture rails are provided in the basement corridor on both sides, with min. 1 hook per linear meter.	
54.	If requested by USAREUR, windows at the far ends of the corridors have been modified to window-doors with removable protection guards at least	

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		1.07 m above FFL.	
55.		The locations of electrical panels are shown.	
56.		Light switch locations are in accordance with the BDM.	
57.		Wall tiles are flush with wall base and plaster above.	
58.		Each corridor is provided with a recessed drinking fountain.	
		<u>ARMS ROOMS</u>	
59.		The exterior steel bar gate conforms to the design detailed in the BDM. The door opening is located so that both the inside and outside doors can be held open at 180° with door holders.	B 07.4.7 Fig. 07.31
60.		The walls, ceiling/roof, and floor conform to the construction requirements outlined in the BDM.	B 07.2.4.1, B 07.2.4.2, B 07.2.4.3
61.		Recessed wall lugs able to withstand a tensile force of 228 kg (500 lbs.) are provided. Two floor lugs are also provided 1.8 m apart.	B 07.2.4.4
62.		Ships light fixtures are provided between doors in the corridor.	
63.		The ceilings and walls are free of utility line penetrations except as required for the Arms Room.	
64.		A “Z” type air intake with a T-30 rating is provided from the corridor.	
65.		Do not provide a dehumidifier in the arms room.	
66.		A concrete floor is provided with a wearing surface with hard aggregate grain, min.15 kg / m² (1 cm wear course), smoothed surface with a skid rating of R10.	
67.		Windows are not provided in the arms rooms. Existing windows will be closed with reinforced concrete according to the criteria for arms rooms walls.	
68.		Electrical receptacles have not been located on an exterior wall.	
69.		Provide sub-distribution panel for lights and receptacles in the arms room.	
70.		Receptacles in the arms rooms may be surface mounted in protective	

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		conduit.	
		<u>MUD ROOMS</u>	
71.		A concrete floor is provided which slopes toward floor drains. The surface is provided upon admixture of hard aggregate grain, min.15 kg / m ² (1 cm wear course), smoothed surface with skid rating R10.	B 07.2.5.2
72.		Show location of wall mounted water bib, hose and stainless steel hose reel on the floor plans.	B 10.5.5
73.		Provide hot (60 degree C) and cold water to all sinks.	
74.		Mudroom light switch shall be located on the exterior of the room in the corridor. The switch shall have a glow lamp.	
		<u>ELECTRICAL ROOMS</u>	
75.		A terrazzo tile floor and granite base is provided.	B 07.2.1.2
		<u>MECHANICAL ROOMS</u>	
76.		A concrete floor is provided which slopes toward floor drains. The surface is provided upon admixture of hard aggregate grain, min.15 kg / m ² (1 cm wear course), smoothed surface.	B 07.2.1.2
77.		A service sink is provided. Show sink on floor plans.	B 10.5.1
		<u>OFFICE / STORAGE ROOMS</u>	
78.		Suspended ceilings shall be provided in Office/Storage Rooms as necessary to conceal exposed utility lines (where ceiling height permits).	B 07.2.6.3
79.		Picture rails are provided with 25 hooks/room. Hooks are not shown behind doors.	B 07.2.6.1.1
80.		Do not locate electrical receptacles on exterior wall.	
81.		All Office/Storage rooms shall have at least one window.	

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		<u>LATRINES</u>	
82.		The term “Latrine” is used, not “Toilet”.	
83.		Stalls are provided around latrine water closets.	
84.		A floor drain and water bib are located between the lavatories.	
85.		Shower curtains are provided for shower booths.	
86.		Direct view from the corridors shall be prevented. If a partial height wall is provided, it allows space for a 35 gallon trash adjacent to the lavatories.	B 07.3.2
87.		Women’s latrines are equipped with urinals with covers.	B 10.5.2
88.		Privacy walls are provided beside and between the urinals.	
		<u>STORAGE BIN ROOMS</u>	
89.		At least one storage bin is provided per bedroom. Storage bins are detailed.	B 07.3.3.3
90.		All storage bins are numbered.	
91.		Front and top views of storage bins are provided.	
92.		The gap between the locking hasps does not exceed 3 mm.	
		<u>KITCHENS</u>	
93.		Do not provide icemaker in kitchens.	
94.		Enlarged kitchen plans and elevations are provided showing electrical receptacles, goose-neck faucets, and all Government furnished equipment. The layout and equipment comply with the requirements outlined in the BDM.	B 07.1.5.4, Fig. 07.10
95.		Provide a base for the Government furnished oven in the kitchen. The base shall be 15 cm high. The base shall be constructed to match the kitchen cabinet base.	
96.		Flat cove wall base tiles are provided.	B 07.1.5.2
97.		The width of the space for the stove is 60 cm.	

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98.		The valence trim is provided on the bottom of the upper cabinets.	
99.		The exhaust for the stove hood is shown.	
100.		The aluminum heat protectors on cabinets adjacent to the stove are shown.	
		<u>BEDROOMS</u>	
101.		Enlarged bedroom plans and elevations are provided showing all picture boards, lights, electrical panels, door stops, government furnished furniture, and electrical, TV, and telephone receptacles.	
102.		Show electrical receptacles in bedrooms on interior elevations with correct mounting height.	
103.		Enlarged closet plans and elevations are provided showing government furnished cabinets.	B 07.1.1.8 Fig. 06.6
104.		The closet shelf is extended over the cabinets.	Fig. 06.6
105.		Picture rails are provided with 25 hooks/sleeping room. Hooks are not shown behind doors. Picture rails shall be fastened with 2 screws one above the other at 60 cm on center.	B 07.1.1.2
106.		Enlarged bathroom plans and elevations are provided showing tiling, floor drain, and location and height of all equipment.	B 07.1.3 Figs. 06.1-06.5
107.		Towel holders, wall hooks, coat hooks, toilet brush, shower grab bar, shower curtain rod and shower sponge baskets shall be located per the BDM. Material and finish shall be per the BDM.	
108.		Show and specify wall mounted toilet seat stopper.	
109.		The light and ventilation system are switched together in NCO and non-NCO bathrooms.	
110.		Enlarged kitchenette plans and elevations (front and side) are provided showing electrical receptacles, goose neck faucets, corner protectors, and all Government furnished equipment. The layout and equipment comply with the requirements outlined in the BDM.	B 07.1.2, Fig. 06.3
111.		Kitchenette walls are only tiled to the bottom of the upper cabinets. The walls of the refrigerator nook are not tiled.	

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112.		The partition walls in the kitchenettes shall have the edge surfaces protected with beachwood boards as described in the BDM.	Figs. 07.3 & 07.4
113.		Ceiling lights do not interfere with the opening of overhead kitchenette cabinet doors.	
		<u>TV / GAME ROOMS</u>	
114.		All required equipment is shown (by dotted lines) and labeled in the architectural plan.	B 07.3.1
115.		Picture rails are provided with 25 hooks/room. Hooks are not shown behind doors.	B 07.3.1.1.1
		<u>TV EQUIPMENT / COMMUNICATION ROOMS</u>	
116.		These rooms are centrally located. The distance to the furthest TV outlets is no more than 40 meters from these rooms.	
117.		The rooms are stacked and chases are aligned.	
118.		The door swings into the room, not into the corridor, if possible.	
		<u>TELEPHONE ROOMS</u>	
119.		A minimum of 4 commercial telephone outlets shall be provided.	
		<u>JANITOR'S CLOSETS</u>	
120.		A Rotter (brand name) clamping strip for brooms and mops is located behind the door at 2 m above FFL, with 50 cm between the door and wall. Three holders and four hooks are provided.	B 07.1.4 Fig. 07.9
121.		A floor drain is located in front of the sink.	
122.		The sink is provided with the required clearances to the door and shelves.	
123.		Flat cove wall base tiles are provided.	B 07.1.4.2
124.		The light and ventilation systems are switched together. Both switches are	

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		located inside the room.	
125.		Provide hot (60 degree C) and cold water to all sinks.	
126.		Janitor's closet must have natural ventilation.	
		<u>ROOF</u>	
127.		Antenna, roof accesses, ventilation outlets, and snow guards are shown on building elevations, sections, and roof plans.	
		<u>STAIRS AND RAMPS</u>	
128.		Stair risers are a maximum of 17.8 cm high. Treads have a minimum effective depth of 27.9 cm.	
129.		Stairs and ramps have handrails on both sides. Stair handrails project no more than 8.9 cm into the required width of the stairway, but are no closer than 3.8 cm to the wall to which it is fastened. The handrails are 96 cm above the surface of the tread on the wall side and 110 cm on the open side (measured vertically to the top of the rail from the leading edge of the tread).	
130.		Outer stairwell railings are not continuous at horizontal platforms and landings. At the top of the stair the rail extends 30 cm horizontally beyond the top riser. At the bottom of the stair it extends at the same angle for a distance equal to the width of one tread and then horizontally for 30 cm.	
131.		Windows have been provided in interior stairwells where feasible.	
132.		Stairwell doors are non-laminated steel.	
133.		Exterior doors are single leaf.	
		<u>FIRE SAFETY</u>	
134.		All rooms shall be sprinklered.	
135.		Exterior doors within 3.00 m from outward projections or other structures are provided with the required fire rating.	
136.		The locations of recessed fire extinguisher cabinets are shown in the corridors.	B 04.4.4 Fig. 04.13

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137.		The recessed fire extinguisher cabinets are sufficiently detailed to ensure the required wall fire ratings are maintained.	
138.		Fire extinguishers shall be Government furnished and installed.	
139.		Wall-mounted electro-magnetic hold-open devices with the appropriate signage are shown on the floor plans and elevations where required.	
140.		Dry pipes and wall hydrant cabinets are provided for all stairwells.	
141.		Do not provide fire department key box.	
142.		All dry pipes shall be connected to meet the requirements of NFPA 14	
143.		Hydrant cabinets are flush mounted. Wall fire ratings are maintained.	
144.		Do not provide smoke vent in stairwells.	
145.		Perform fire flow test to determine if pump is required for the sprinkler system.	
		<u>BARRACKS LESSONS LEARNED</u>	
146.		A thorough structural survey of the building must be done before design start. The survey must be done by a qualified structural firm that has at least 3 years experience with structural surveys of older buildings. The survey needs to determine the elevation of the bottom of the exterior basement walls and verify if it has a footing. The elevation of the top of all structural floors shall be determined. All bearing walls must be located. The span direction of all slabs must be identified. The thickness of the structural floors as well as the type and thickness of all flooring and ceiling materials on top of and under the structural floors must be identified. At least one floor core sample in each different type of finished floor material must be taken. At least one core sample of each wall type of different thickness must be taken. The existing roof structural members must be located and measured and proofed for structural adequacy. And all ceiling layers shall be identified in the upper attic.	
147.		Salient characteristics for all items shall be per the Barracks Design Manual.	
148.		Often the demolition quantities are wrong and items are left out of the demolition specification. Use the results of the structural	

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	investigation to identify all existing materials to be removed and their respective thickness. A thorough survey of all areas inside as well as outside is required to adequately identify and quantify all items for demolition.	
149.	If the barracks renovation project is a partial renovation of a building or the barracks is served by long distance heating lines the adequacy of the lines serving the building that may not be in the scope of work of renovation must be checked for soundness. The amount of hot water and the temperature of the water serving the building must also be verified.	
150.	Telephone and data cabling must comply with the Barracks Design Manual dated October 2000 and shall be coordinated with the liaison office of the 5 th Signal Command.	
151.	A thorough hazardous material survey must be done to include sampling and testing for hazardous materials in accordance with U.S. and German regulations. The survey must be done by a qualified firm with at least 3 years experience of performing hazardous materials surveys and testing. The survey shall identify all the materials in the building which are hazardous and must be demolished and disposed of as hazardous materials. The survey shall identify the location, quantity and type of each material.	
152.	The specifications shall include the requirement for a prototype living/sleeping room module in accordance with the Barracks Design Manual.	
153.	Include specification items for all floor and wall borings for piping, electrical ducts, vents and fans. Include specification item for all wall slots. Walls slots in structural walls may need lintels or other structural supports. Include specification for plaster cover for wall slots.	
154.	The condition of the exterior plaster shall be determined to see if replacement is required.	
155.	The new fire alarm system must be compatible with the system used by the DPW.	
156.	Water softeners shall not be provided.	
157.	Stairway doors and exterior doors must be 1.125 meters wide in accordance with the Barracks Design Manual.	

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158.	For a fully gutted building there should be no partial interior plastering. All interior walls should be newly plastered.	
159.	The bathroom fixtures and accessories and the kitchen cabinets must be in accordance with the Barracks Design Manual.	
160.	Provide corridor wall vents with T-30 valves between the latrines, mud room, laundry room and janitor's room and the corridor in accordance with the Barracks Design Manual.	
161.	Specify all steel door frames to be filled solid with grout. Aluminum frames shall be filled with rock wool	
162.	Provide a spec item for painting the baseboards in accordance with the Barracks Design Manual.	
163.	The bathroom doors shall have the turn knob for the lock on the bedroom side and the bathroom side shall be provided with a short plate.	
164.	The Saflok locks shall be specified to be provided without deadbolts. Where Saflocks are mounted on walls, they can not be more than 12 meters from their power supply.	
165.	The emergency light batteries shall have a 90 minute capacity.	
166.	If the building has a natural stone base include re-pointing and refinishing of the natural stone work in the specifications. If there are penetrations through the natural stone work include the demolition work and providing for small pieces of new natural stone to match the existing.	
167.	Locate all existing underground utilities under and around the building – get utility drawings from the DPW	
168.	Do not remove bonded cement estrich from a kaiserdeck floor system.	
169.	Floors shall be F90 rated even if the building is sprinklered. The floor/ceilings shall meet the requirements of DIN 4102 for an F90 rating. The rating shall be indicated on the building cross sections.	
170.	When calculating hot water consumption assume 100% usage and 0 diversity. In other words design for peak usage. Everybody gets up at the same time and showers at the same time.	

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171.		At the beginning of the design process have a “utility meeting” with the DPW engineers. The purpose of the meeting is for the DPW to identify all the existing utilities and locations to the designer. The DPW will also turn over their as-built drawings and notify the designer of any upcoming utility projects that would affect the new design.	
172.		A structural engineer will be present at the demolition preparatory meeting on site with the contractor and shall monitor the contractor’s work periodically during the demolition phase.	

(End of List)